

COLLEMBOLA FROM VERMONT¹

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ABSTRACT: 57 collembolan species are recorded, mainly from the University of Vermont collection; 52 of these are new state records.

The only published records of Collembola from Vermont prior to Christiansen & Bellinger, 1980-81, are of three species of *Entomobrya* (Folsom, 1924; Christiansen, 1958). Since 200 species were recorded from New York by Maynard (1951), it is evident that the Vermont fauna of this order has been neglected.

I have recently had the opportunity to study the collection of the University of Vermont, accumulated mainly through the efforts of Dr. Ross T. Bell and his students. Much of the material comes from the mountains east of Burlington, but there are scattered collections from many parts of the state. Most records are of specimens collected by hand or in pitfall traps, and large, active surface species predominate. However, some Berlese extracts from Camel's Hump, Chittenden County, contain representatives of the smaller hemiedaphic and euedaphic species.

The following list includes all species of Collembola known to occur in Vermont. Unless a reference is given, records are from the University of Vermont collection. Localities are in Chittenden Co. unless another county is named. Records without locality are from Camel's Hump, Chittenden Co.

Podura aquatica L. Gleason Brook, 1400'.

Hypogastrura (H.) harveyi (Folsom). Mt. Dewey, Underhill.

H. (H.) lima Christiansen & Bellinger. 16 collections, 3000'-4000'.

H. (H.) nivicola (Fitch). 2800', 22 July; Lewis Creek Mouth, N. Ferrisburg, Addison Co., 25 May. The species is usually found on snow in winter.

H. (H.) packardi (Folsom). Owl's Head, Richmond.

H. (Ceratophysella) denticulata (Bagnall). 4050', bilberry meadow; Jonesville; Milton, Mt. Dewey; South Starksboro, Addison Co.; Fairfax, sand pit, Franklin Co.

H. (Mitchellania) hiawatha (Yosii). 3900'.

H. (M.) loricata Yosii. 5 collections, 3300'-3900', in mushroom, in sphagnum, etc.

Freisea sublimis Menamara. 2800'.

Pseudachorutes aureofasciatus (Harvey). 5 collections, 3800'-3950'; Bristol-Middlebury line, Addison Co.

P. simplex Maynard. 2800'.

Anurida (A.) cf. *granaria* (Nicolet). 3300', in sphagnum.

A. (Micranurida) pygmaea (Borner). 2800', 3900'.

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Neanura muscorum (Templeton). 7 collections, 3300'-4000'; Jonesville; South Starksboro, Addison Co.

Onychiurus (Archaphorura) affinis Agren. 4050', bilberry meadow. First record south of Canada.

O. (Protaphorura) armatus (Tullberg). Rutland Co. (Christiansen & Bellinger, 1980).

O. (P.) parvicornis Mills. 2800', 3700'.

O. (P.) subtenuis Folsom. 9 collections, 2800'-4000', balsam fir litter etc.: Mt. Dewey, Underhill.

O. (Onychiurus) folsomi (Schaffer). 3 collections, 3300'-3900'.

Proisotoma (Ballistura) alpa Christiansen & Bellinger. 7 collections, 3900'-4050', including bilberry meadow; Owl's Head, Richmond. Previously known only from the type locality, Mt. Washington, New Hampshire.

Cryptopygus thermophilus (Axelson). Fairfax, sand pit, Franklin Co.

Folsomia penicula Bagnall. 12 collections, 2800'-4500', in sphagnum, balsam fir litter, bilberry meadow, etc.

Metisotoma grandiceps (Reuter). 5 collections, 2800'-4000'. Windsor Co. (Christiansen & Bellinger, 1980).

Isotomiella minor (Schaffer). 5 collections, 2800'-3900'.

Isotomurus palustris (Müller). Duxbury, 3900', Washington Co.

I. tricolor (Packard). Winooski R., Winooski.

Isotoma (Desoria) nigrifrons Folsom. South Starksboro, Addison Co.

I. (D.) notabilis Schaffer. 4 collections, 2800'-3900'; South Starksboro, Addison Co.

I. (D.) cf. *propinqua* Axelson. 2800', 8 July; 3300', 2 August; most are "Spinisotoma" ecomorphic forms which may be seasonal. This is probably a new species which is being described by J. Najt.

I. (D.) tariva Wray. 3900', balsam fir litter. Not previously recorded north of Pennsylvania.

I. (Isotoma) veridis Bourlet. 6 collections, 3900' 4050'; Mt. Philo Rd., Shelburne; Fairfax, sand pit, Franklin Co.

I. (Pseudisotoma) sensibilis Tullberg. 3000', 3900'.

Orchesella cincta (Linnaeus). Springfield, Windsor Co.

O. hexfasciata (Harvey). 37 collections, 1180'-3900'; Lewis Creek, Milton, Mt. Dewey, and Owl's Head; Bristol-Middlebury Line, and South Starksboro, Addison Co.; South Cambridge, Lamoille Co.

O. villosa (Linnaeus). 4 collections, Mt. Philo Rd., Shelburne; South Burlington; Winooski; Fairfax, sand pit, Franklin Co.

Entomobrya (Entomobrya) assuta Folsom. 3800'. Rutland Co. (Folsom, 1924).

E. (E.) multifasciata (Tullberg). 3500'; Fairfax, sand pit, Franklin Co.; South Cambridge, Lamoille Co.; Springfield, Windsor Co.

E. (E.) nivalis (Linnaeus). Milton town line, Mayo Rd. off Rt. 2, Burlington (Christiansen, 1958).

E. (Entomobryoides) purpurascens (Packard). Milton town line, Mayo Rd. off Rt. 2; South Starksboro, Addison Co. Brattleboro, Windham Co. (Christiansen, 1958).

Willowsia nigromaculata (Lubbock). South Burlington, in bathtub.

Lepidocyrtus helenae Snider. South Starksboro, Addison Co.

L. pallidus Reuter. Milton, net sweeping; Fairfax, sand pit, Franklin Co.

L. paradoxus Uzel. Milton, sweeping and pit traps; Shelburne, Lewis Creek Mouth, and New Haven, Addison Co.; Fairfax, sand pit, Franklin Co.

L. violaceus (Fourcroy). 3 collections, 1850'-4000'.

Pseudosinella rolfsi Mills. Johnson, Lamoille Co.

Tomocerus (Pogonognathellus) elongatus Maynard. Milton town line, Mayo Rd. off

Rt. 2: Bristol-Middlebury line, Addison Co.

T. (P.) flavescens (Tullberg). 65 collections, 1180'-4000': Burlington, Essex, Essex Park, Fort Ethan Allen, Milton, Mt. Dewey, Owl's Head, Shelburne Bay, South Burlington, and Winooski; Starksboro, South Starksboro, and 1 mile south of Lincoln Gap, Addison Co.; Fairfax, sand pit, Franklin Co.; South Cambridge, and Stowe, Lamoille Co.; Duxbury, and Montpelier, Washington Co.; Springfield, Windsor Co.

Neelus (Megalothorax) minimus (Willem). 3900'.

N. (Neelides) minutus Folsom. 3300'.

Sminthurides (S.) lepus Mills. 7 collections, 1180'-3900'.

Sminthurinus (Katiannina) macgillivrayi (Banks). 6 collections, 1180'-4000'.

S. (Sminthurinus) henshawi (Folsom). 1180'.

S. (S.) quadrimaculatus (Ryder). 3500'; Jonesville.

Bourletiella (B.) hortensis (Fitch). Fairfax, sand pit, Franklin Co.

Sminthurus (S.) butcheri Snider. 9 collections, 3400'-4100': Fort Ethan Allen; Fairfax, sand pit, Franklin Co.

Dicyrtoma (Ptenothris) atra (Linnaeus). 5 collections, 2800'-3900': Milton; South Starksboro, Addison Co.

D. (P.) marmorata (Packard). 9 records, 1180'-3900': South Starksboro, Addison Co.; Fairfax, sand pit, Franklin Co.

This list omits several species which could not be determined because specimens were immature or damaged; among these is a new species of *Arrhopalites*.

There are no records of Collembola from six of the fourteen counties of Vermont, and I suspect that the 50 species recorded from Chittenden Co. are less than half the number which actually occur there. Vermont is not really unusual in this respect; systematic collecting in almost any locality in the United States would add new records and, very likely, new species.

LITERATURE CITED

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